

IN THE CLAIMS:

Please amend claims 1 and 5 and add new claims 8-13.

DI 1. (Currently Amended) A method for modifying the rheology of a slurry of a [mineral-containing] solid material and water, wherein the [mineral-containing] solid material is nickel ore, cobalt ore, precious metals ore, copper ore, taconite, mineral sands, coal bauxite or a mixture thereof, the method comprising adding to the slurry a sulfonate-containing polymer and wet grinding the slurry in a mill. [wherein the polymer is prepared by polymerization of vinyl monomers containing a sulfonate functional group with an amu ranging from about 2,000 to about 100,000.]

2. (Original) The method of claim 1 wherein the polymer is selected from the group consisting of a sulfonate-containing polyacrylamide, a sulfonate-containing polyacrylic acid or a mixture thereof.

3. (Previously Cancelled)

4. (Previously Amended) The method of claim 1 wherein the polymer comprises repeat units derived from acrylamide, acrylic acid and acrylamido-2-methyl propane sulfonate monomers.

5. (Currently Amended) The method of claim 1 wherein the polymer is further characterized as having a molecular weight ranging from about 2,000 to about 20,000 number average molecular weight [amu].

6. (Previously Amended) The method of claim 1 wherein the polymer is further characterized as comprising repeat units derived from about 3 to about 40 mole% acrylamido-2-methyl propane sulfonate monomer, from about 5 to about 45 mole% acrylamide monomer and from about 30 to about 70 mole% acrylic acid monomer.

D1 Contd
7. (Previously Amended) The method of claim 1 wherein the polymer is further characterized as comprising repeat units derived from about 5 to about 10 mole% acrylamido-2-methyl propane sulfonate monomer, from about 30 to about 40 mole% acrylamide monomer and from about 55 to about 65 mole% acrylic acid monomer.

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8. (New) A method for pumping a slurry of a solid material and water from a mine to a processing plant, wherein the solid material is nickel ore, cobalt ore, precious metals ore, copper ore, taconite, mineral sands, coal bauxite or a mixture thereof, the method comprising the steps of adding to the slurry a sulfonate-containing polymer and pumping the slurry from a mine to a processing plant.

9. (New) The method of claim 8 wherein the polymer is selected from the group consisting of a sulfonate-containing polyacrylamide, a sulfonate-containing polyacrylic acid or a mixture thereof.

10. (New) The method of claim 8 wherein the polymer comprises repeat units derived from acrylamide, acrylic acid and acrylamido-2-methyl propane sulfonate monomers.

11. (New) The method of claim 8 wherein the polymer is further characterized as having a molecular weight ranging from about 2,000 to about 20,000 number average molecular weight.

12. (New) The method of claim 8 wherein the polymer is further characterized as comprising repeat units derived from about 3 to about 40 mole% acrylamido-2-methyl propane sulfonate monomer, from about 5 to about 45 mole% acrylamide monomer and from about 30 to about 70 mole% acrylic acid monomer.

13. (New) The method of claim 8 wherein the polymer is further characterized as comprising repeat units derived from about 5 to about 10 mole% acrylamido-2-methyl propane sulfonate monomer, from about 30 to about 40 mole% acrylamide monomer and from about 55 to about 65 mole% acrylic acid monomer.
